UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/494,670	01/31/2000	· Mory Benoit	PHF-99.507	3768

24737   7590   12/31/2003

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EXAMINER
AN, SHAWN S

ART UNIT	PAPER NUMBER
2613	/0

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02 October 2003</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7,8,10 and 11* is/are rejected.

7)☒ Claim(s) *6,9 and 12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1.   As per Applicant's instruction in Paper 9 as filed on 10/2/03, claims 1-7 have been amended, and claims 8-12 have been newly added.

Response to Remarks

2.   Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection using the same references as the previous Office action.

Applicant contends that Ahanger fails to disclose "... motion of camera ... within <u>any</u> sequence of <u>one</u> or more frames of the video scene ...".

In response, the Examiner respectively disagrees. Given the claim limitation of <u>one</u> or more frames, the Ahanger reference only has to meet <u>either</u> the <u>one</u> or the <u>more</u> frames. Since Ahanger discloses within <u>any</u> sequence of the <u>frames</u> of the video scene (Video Attributes: Fig. 1), the amended claim limitation as above has been met.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1, 5, 7-8, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahanger et al (SPIE Proceedings series, 1995) in view of Altunbasak et al (6,389,168 B2).

Regarding claims 1 and 10, Ahanger et al discloses a computer program product (page 5, lines 4-12) and a video indexing device for receiving a video scene having multiple frames and forming a descriptor (abs.) to represent motions of a camera within <u>any</u> sequence of <u>one</u> or more frames of the video scene, wherein a computer program and the motions comprising at least <u>one</u> of the following basic motion types:

fixed, panning, tracking, tilting, booming, zooming, dollying, and rolling, or any combination of at least two of these operations (Fig. 1),

wherein each of the motion types, except fixed, is oriented and subdivided into two components that stand for two different directions (Fig. 1, panning,<u> arrow left (one direction) or arrow right (another direction)</u>; booming, <u>arrow up (one direction) or arrow down (another direction)</u>; and zooming, <u>arrow in (one direction) or arrow out (another direction))</u>.

Ahanger does not specifically disclose an histogram having a dependent variable with the values that each correspond to a respective predefined size of displacement.

However, Altunbasak et al teaches calculating motion histogram based on camera operations (Fig. 11, 100; col. 10, lines 15-26).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a descriptor for the representation of motion of a camera in a video sequence as taught by Ahanger et al to incorporate the concept of calculating motion histogram having a dependent variable with the values that each correspond to a respective predefined size of displacement as taught by Altunbasak et al as a specific tool to identify such camera operations so that an user can retrieve video frames that include a query video object.

Regarding claim 5, Ahanger et al discloses the description being hierarchical, by means of a representation of the motion handles at any temporal granularity (Fig. 2).

Regarding claim 7, Ahanger et al discloses an image retrieval system comprising a camera (Fig. 1) for the acquisition of video sequences, a video indexing device and a data base (**1 INTRODUCTION**, 1st para., 3 rd para., a data base system), a graphical user interface (for

carrying out a requested retrieval from the database, and a video monitor for displaying the retrieved information (**4, QUERY FORMULATION**), wherein an indexing operation is based on categorization resulting from the use of the descriptor of claim 1 (**4, QUERY FORMULATION**, last two para.).

Regarding claims 8 and 11, Altunbasak et al discloses the histogram having an independent variable with values configured to each correspond to a different one of the motion types (col. 10, lines 15-26).

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ahanger et al and Altunbasak et al as applied to claim 1 above, and further in view of Miyatake et al (5,267,034).

Regarding claim 2, the combination of Ahanger et al and Altunbasak et al does not specifically disclose motion type having its own speed described in an unified way by choosing a common unit.

However, Miyatake et al discloses motion type having its own speed described in an unified way by choosing a common unit (col. 8, lines 17-45).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a descriptor for the representation of motion of a camera in a video sequence as taught by Ahanger et al to incorporate the concept of motion type having its own speed described in an unified way by choosing a common unit as taught by Miyatake et al so as to accurately measure or calculate the speed of motion type for analysis.

6. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahanger et al and Altunbasak et al as applied to claim 2 above, and further in view of Jeannin (5,929,940).

Regarding claim 3, the combination of Ahanger et al and Altunbasak et al does not particularly disclose motion type speed being represented by a pixel-displacement value working at the half-pixel accuracy.

However, Jeannin teaches conventional method of motion estimation comprising motion type speed represented by a pixel-displacement value working at the half-pixel accuracy (Fig. 2, col. 8, lines 23-27). Furthermore, half-pixel motion vector is frequently used in current standard for predicted motion system, such as in MPEG and/or H.263.

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a descriptor for the representation of motion of a camera in a video sequence as taught by Miyatake et al to incorporate the well known concept of motion type speed being represented by a pixel-displacement value working at the half-pixel accuracy as taught by Jeannin as an efficient/conventional method to estimate the motion vectors between the two pixels.

Regarding claim 4, the Examiner takes official notice that it is considered quite obvious and well known to simply round the speed (motion vector) to the closest half-pixel value, and multiply by 2, in order to obtain an integer value, thereby working with the simple (not having decimal) numbers. The above information (rounding and multiplying by 2) is unquestionable well known and capable of verification through the elementary mathematical textbooks.

Allowable Subject Matter

7.   Claims (6, 9), and 12 are objected to as being dependent upon a rejected base claims 1 and 10, respectively, but would be allowable: if claim 6 or claim 9 is rewritten in independent form including all of the limitations of the base claim 1 and any intervening claims; and if claim 12 is rewritten in independent form including all of the limitations of the base claim 10 and any intervening claims

Dependent claims 6, 9, and 12 recite novel feature wherein the histogram is configured according to the equation:

T type of motion = (N type of motion / N)   (Refer to the equation in claims 6, 9, 12)

Accordingly, if the amendments are made to the claims listed above, and if rejected claims are canceled, the application would be placed in condition for allowance.

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office

action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is

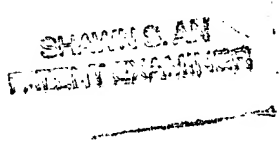reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR

1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

will the statutory period for reply expire later than SIX MONTHS from the date of this final

action.

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Shawn An whose telephone number (703) 305-0099 and

schedule are Tuesday-Friday.

CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

SSA

December 28, 2003